

Atty. Docket No. AARL 01-25  
Amdt. Dated Feb. 24, 2005  
Reply to Office action of October 29, 2004  
Appl. No. 10/025,725

**PATENT APPLICATION**

**REMARKS**

Upon entry of this Amendment, claims 1-27 are all the claims pending in the application. Claims 23-27 have been added. Claims 1-22 have been examined and all claims 1-22 have been rejected. Specifically, claims 1, 2, 12 and 13 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Katayanagi et al. (USP 5,687,285); Claims 7 and 18 have been rejected under 35 U.S.C. § 103 as being unpatentable over Katayanagi et al.; and Claims 3-6, 8-11, 14-17 and 19-22 have been rejected under 35 U.S.C. § 103 as being unpatentable over Katayanagi et al. in view of Ertem et al. (USP 6,453,289).

For the reasons set forth below, Applicant respectfully traverses the rejections and requests favorable disposition of the application.

***Argument***

The invention to which the present application is directed is a system and method for calibrating audiometry stimuli. More particularly, the invention is a method and attendant system in which recorded words or groups of words are calibrated to maintain a consistent, or otherwise known, sound energy. That is, according to at least one embodiment, as disclosed in the present specification, recorded words used for hearing tests are "'calibrated' such that the words have substantially the same sound energy." (see, e.g., Page 5, lines 6-7). Each one of claims 1-22 is directed to one or more aspects of the "calibrating" process as defined by the specification.

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One disclosed method for carrying out the claimed calibration process is to determine a desired target value for the root-mean-square (RMS) of a recorded word or set of words and "manipulate a data file containing a discrete representation of a representative waveform of the spoken word, or words, "such that the calculated root-mean-square of the manipulated waveform is within a defined tolerance of the defined root-mean-squared target value." (Page 7, lines 24-26).

***Lack of Recited Elements in the Prior Art***

Both prior art references, Katayanagi et al. and Ertem et al., in comparison, are directed to substantially different subject matter than that which is disclosed and claimed in the present application. In particular, Katayanagi et al. is directed to a "noise reducing method and device for reducing the noise contained in an input speech signal." (Abstract). That is, the object of the method disclosed in Katayanagi et al. is to reduce the magnitude of noise portions of a recorded sound pattern in comparison to speech portions of recorded sound patterns. There is no disclosure within Katayanagi et al. that teaches, or even suggests, "calibrating" spoken words such that the words have "substantially the same sound energy".

***§102 Rejection***

At column 4, lines 1-40, Katayanagi et al. discloses a method in which a given speech pattern is digitally recorded,  $(x(n))$ , and divided into a series of individual frames, each comprising 160 samples. The RMS value of the power of each of the frames is calculated and if the RMS value is greater than a given threshold, a suppression ratio, or scaling factor, of one is multiplied by the frame power. Alternatively, if the RMS value

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Is less than the given threshold, the frame power value is multiplied by a suppression ratio less than one. In other words, as disclosed, "by suitably selecting the threshold value ..., the gain is controlled to a smaller value for a small power portion, such as a noise portion, thus effectively achieving the noise reduction." (Column 4, lines 34-38). On the other hand, for larger power portions, such as words, no gain is provided to the signal. That is, unlike the invention disclosed and claimed in the present application, in accordance with the method and device of Katayanagi et al., the recorded words are not calibrated. In fact, it is explicitly disclosed that the desired result of the Katayanagi et al. invention is to leave the power level of recorded words unmodified and scale down the power level of noise.

For at least the above reason, Katayanagi et al. does not anticipate, or otherwise render obvious any of claims 1-22 and the rejection of claims 1, 2, 7, 12, 13 and 18 should be withdrawn.

***§103 Rejection***

Ertem et al., similar to Katayanagi et al., is directed to a noise reduction method. Ertem et al. fails to compensate for the deficiencies described above in regard to Katayanagi et al. Specifically, Ertem et al. discloses a method of reducing the noise portion of a recorded voice pattern and does not anywhere disclose calibrating spoken words in response to at least one defined speech-energy criterion.

Indeed, Ertem et al. discloses, at column 6, lines 30-36, multiplying the incoming signal by a scaling factor. However, multiplying the incoming signal by the disclosed scaling factor is performed "to bring the signal to the nominal level." (Col. 6, line 32).

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Contrary to the assertions in the grounds of rejection, however, scaling the incoming signal to achieve a target "nominal value", as disclosed in Ertem et al., is not the same as scaling recorded word or words "such that a resultant root-mean-squared value of the multiplied discrete representation of the at least one word is within a defined tolerance of the defined root-mean-squared target value", as required by claims 3 and 14. For instance, Ertem et al. does not disclose a tolerance for the defined "nominal" level. Accordingly, in addition to the reason set forth above, because the proposed combination of Katayanagi et al. and Ertem et al. fails to disclose each and every feature of the claims, the §103 rejection of claims 3-6 and 14-17 should be withdrawn.

***Lack of Motivation to Combine & Non-analogous Art***

On page 4 of the office action, the grounds of rejection assert that "it would have been obvious to one of ordinary skill in the art at the time of [the] invention to modify Katayanagi et al. incorporating the teaching of Ertem et al. in order to minimize noise estimation error to optimize the performance of the voice activity detector (VAD)." The sole justification provided for the proposed combination of references is that "Katayanagi et al. and Ertem et al. are analogous art because they are from the same field of endeavor." Although it is arguably possible that Katayanagi et al. is analogous art to Ertem et al., neither Katayanagi et al. nor Ertem et al. are analogous art to applicant's invention. Accordingly, both Katayanagi et al. and Ertem et al. are inapplicable against applicant's claims.

"In order to rely on a reference [under 35 U.S.C. § 103] as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor

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or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." MPEP 2141.01(a), citing *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992). Further, "[a] reference is reasonably pertinent if, even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." *Id.*, citing *Wang Laboratories Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993).

Both Katayanagi et al. and Ertem et al. each fail to disclose a method or system which is from applicant's field of endeavor. Moreover, neither is reasonably pertinent to the particular problem to which applicant was concerned. Katayanagi et al.'s specific field of endeavor is noise reduction for speech collected by a microphone (abstract) and Ertem et al.'s field of endeavor is noise reduction for voice communication system (abstract). Accordingly, it could be argued that both Katayanagi et al. and Ertem et al. are from the same field of endeavor, i.e., the field of noise reduction with respect to recorded speech.

Applicant's invention, however, is from an entirely different field of endeavor. That is, as clearly described in the present specification, applicant's invention is from the field of audiometry and has nothing explicitly to do with noise reduction. Accordingly, because both Katayanagi et al. and Ertem et al. are from a different field of endeavor than applicant's invention, neither is applicable against any of the claims of the present application.

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For this additional reason, none of claims 1-22 are rendered obvious in view of the disclosures of Katayanagi et al. or Ertem et al., either alone or in combination.

### ***Patentability of New Claims***

For additional claim coverage merited by the scope of the invention, Applicant has added new claims 22-27. Applicant submits that the prior art does not disclose, teach, or otherwise suggest the combination of features contained therein. More particularly, the cited references fail to teach or suggest at least the required

### ***Conclusion***

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.


Respectfully submitted,

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**27370**

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Date: February 24, 2005